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ABSTRACT

Reported are preliminary data from a study of the relationship of three family systems dimensions to three measures of adolescent health extracted from the RAND Health Assessment Questionnaire: the Health Index, General Well-Being, and Symptom Checklist. Three hypotheses were tested: (1) perceived family organization, perceived family privacy, and family problem solving ability should differentially predict three health scores; (2) the relationships between family and health variables would be different in high and low stress families; and (3) for adolescents, each sex would affect such relationships differently. Participants were 175 mainly middle-class families with two adults who cohabited for at least 3 years, had at least one adolescent between 14 and 18 years of age at home, and considered themselves of Anglo or Hispanic heritage. With respect to Hypothesis I, all three family scores showed relationships with adolescent health, with that of perceived family organization displaying the most consistent associations. With respect to Hypotheses II and III, both gender and perceived stress interacted selectively with family-health outcome relationships. It is concluded that the data demonstrate the complex relationships between family and health scores in non-referred samples, and that, because self-report instruments are used widely in family and health studies, researchers must be aware of the differential impact of parental perceptions on offspring. (RH)

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FAMILY INFLUENCES ON ADOLESCENT HEALTH

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Family system theory is seen as bridging the gap between strategies that seek the identification of personality or psychological predictors of health and development and those that investigate social or societal influences. Within this perspective, the family is viewed as a complex biopsychosocial unit containing a cluster of interdependent relationships with systemic properties.

We are engaged in a study to identify which family system variables influence the biopsychosocial health and development of family members, using a community-based sample. Our goal is to generate family-based data which can be used (1) to describe family-health relationships; (2) to identify characteristics of at-risk families; and (3) to apply these data to community-based families. In this report, we present preliminary data on the relationship of three family systems dimensions to three measures of adolescent health.

Three hypotheses were tested. First, we predicted meaningful relationships between three measures of family life and three adolescent health scores. Perceived family organization (a family structure variable), perceived family

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privacy (a family belief variable), and family problem solving ability (an interaction variable) should differentially predict the three health scores, illustrating that both family functioning and adolescent health are multi-dimensional constructs. The second and third hypotheses refer to the interacting roles of sex of adolescent and parental perceived stress. We predicted that the relationships between family and health variables would be different in high as opposed to low stress families and that the sex of the adolescent would impact these relationships differently.

METHODS

Sample. 175 families from a far west community of 500,000 were recruited through a computer-generated random telephone screening procedure. Families were accepted for study if they contained two adults who cohabited for at least three years, had at least one adolescent between the ages of 14 and 18 residing at home, and considered themselves of either Anglo or Hispanic heritage. The sample (see below) essentially was a middle-class cohort of stable families in which the average length of marriage was approximately 17 years, and in which 69% of all children residing within the home were the biological offspring of both adults. Because they were recruited from the community at large and not through a health care facility, these families had relatively few severe chronic health problems and acute symptoms, although most major categories of disorder were represented. Consequently, their perceived general well-being, their health

practices, and their attitudes and expectations regarding their health were of considerable interest. The inclusion of more than one adolescent from each family, unfortunately, would confound the statistical analysis of the data due to a lack of independence among subjects. Consequently, in families in which there was more than one 14-18 year old, a random selection procedure was undertaken to identify a single, index adolescent. The resulting sample of 175 families consisted of 87 male and 88 female index adolescents.

Procedure. Following identification by telephone screen, each family was sent a letter of introduction, including recent newspaper acticles on the Project. During a follow-up phone call, a home visit was scheduled to explain the project and to recruit the family. Families were told that they would be asked to complete extensive health history, belief, and practice questionnaires and to participate in several videotaped tasks. Also, they would be paid $100 upon completion of the protocol. If the family agreed to participate (acceptance rate was 43% of eligible families), they were asked to complete a packet of questionnaires at home and to bring them to the first laboratory session, usually scheduled about one week later. A second laboratory visit for the couple only also was scheduled at that time. In total, each family spent between approximately 7 and 10 hours with Project activities and all families who began the protocol competed it.

The data reported here were derived from the following instruments. The perceived family Organization scale is a 14-

item measure extracted from the California Family Life Scales, a 98-item, factor analyzed, self-report instrument which assesses various dimensions of family structure and belief. Organization scale items reflect family orderliness, clarity of roles, household routines, and clarity of leadership (α = .798).

Perceived family Privacy is a 6-item scale also extracted from the California Family Life Scales (α = .690). It assesses beliefs and practices concerning respect for personal possessions, permission to engage in automous tasks, and being by one's self at home.

The Problem Solving score is derived from a family interaction task adapted from Strauss and Tallman's SIMFAM. Family members with different color arm bands toss different color bean bags onto colored squares. The family's task is to discover the rules which govern positive or negative feedback provided after each toss. The score used in this report is the ratio of correct total tosses across all family members, across four separate games.

Perceived Stress was assessed by a 14-item self-report scale developed by Cohen, Kamarach, and Mermelstein (1983). It measures general levels of current, subjective stress. The parental self-reported Perceived Stress scores were combined by dividing the respective distributions of mother's and father's scores at the median and assigning a high or low code to each parent. High stress families were defined as those in which both parents received a high code, and, likewise, low stress families were defined as those in which both parents received a low code.

The family was designated as "mixed" if the parents were not in the same half of their respective distributions.

Three measures of adolescent health, belief, and symptoms were used, all extracted from the RAND Health Assessment Questionnaire. The Health Index is a 21-item scale assessing current physical health attitudes and beliefs, and expectations of future health. It reflects the respondant's global orientation and attitude regarding health status. General Well-Being is a 9-item scale assessing feelings of happiness, satisfaction, and positiveness toward life. A Symptom Check List also was extracted from the RAND instrument. It is comprised of 17 common physical symptoms and 7 signs of anxiety or depression. The total number of physical symptoms and emotional signs were transformed separately into z scores and then summed to represent a combined Symptom Index.

Correlations between each of the above scales and social class and family size were sufficiently low for these variables to be omitted from further analysis. Only two correlations reached statistical significance (Privacy with Social Class = .24; and Privacy with Family Size = -.19).

Results and Discussion

The data were analyzed by a Family Score (high versus low) X Gender X Stress Level (High, Mixed, Low) ANOVA for each of the family scores by each dependent, adolescent health variable. Because Organization and Privacy are self-report instruments, both mother's and father's score were entered as separate main

effects.

The results of the nine ANOVAs, along with cell means for significant effects, are presented below. With respect to Hypothesis I, the three family variables displayed consistent relationships to the adolescent health variables. However, Health Index scores were most consistently related to the three family scores with General Well-Being and Symptoms showing less frequent associations over several analyses. Attitudes and beliefs about life and health in general appeared more germane to these family measures than did symptoms of physical and psychological disorder, when using a community-based sample.

In all cases, high levels of Organization, Privacy, and Problem Solving were associated with positive health scores. The number and pattern of significant effects for the Organization variable, however, indicated that the perceived structure and order of family life may have more relevance for adolescent health than the other family variables measured.

With respect to Hypotheses II and III, both gender and perceived stress interacted selectively with family-health outcome relationships. Of note was that family score main effects occurred only for mother-reported family variables, demonstrating the more direct influence of mothers over fathers on their adolescent offspring. Father-reported Organization and Privacy scores, however, impacted adolescent health by interacting with stress and gender. For example, father's Privacy score impacted females more than male adolescents and father-reported high Organization families may serve to buffer

adolesents as a group against the negative effects of moderate levels of parental stress on health. When gender effects occurred, male adolescents generally reported more positive health scores than female adolesents. Gender also interacted with family scores. Females reported greater increases in health scores in low to high Privacy and Organization families, and males reported greater increases in health scores in low to high Problem Solving families. In addition, parental-reported Percieved Stress impacted more heavily on male than female adolescents.

In summary, all three family scores showed relationships with adolescent health, with Organization displaying the most consistent associations. Symptoms were the least effective discriminators of adolescent health status within this community-based sample. These data demonstrate the complex relationships between family and health scores in non-referred samples. The associations between family and health variables generated by families struggling with chronic or acute disorders may not be similar to family-health relationships derived from families at large. Differences may emerge not onlywith respect to dependent health measures, i.e., severity of illness or disability for acute or chronic disorders versus health beliefs, attitudes, and symptoms for community-based families, but also with respect to specific areas of family functioning.

Also of interest in this regard is the fact that since self-report instruments are used widely in current family and health studies, researchers must be aware of the differential

impact of parental perceptions on offspring. Self-report data reflects the views and behaviors of each parent and not the family as a unit. Such views and behaviors may be derived from a variety of different parental, marital, or other functional roles which vary across families and may be of interest in their own right. For these reasons, it may be unwise to combine mother and father self-report scores to reflect "parental" or "familial" indexes.

Much has been written about how parental child rearing practices, modeling activities, etc., influence the growth and development of offspring. In this brief report, we have begun the process of investigating how dimensions of family system level operation are associated with adolescent health in community-based samples.

DESCRIPTION OF SAMPLE

N	175 Families	
Anglo Families	145	
Hispanic Families	30	
Household Size	4.21	
Social Class	2.76	(Hollingshead and Redlich)
Male Adolescents	87	One per family selected randomly.
Female Adolescents	88	

	Mean	S.D.
Family Income	$43,000	$13,780
Length of Present Marriage	17.18	9.97
Age of Fathers	45.53	7.09
Age of Mothers	41.08	6.00

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Summary Chart
Family (High vs. Low) x Stress (Both Parents High, Mixed, Low)
x Gender of Adolescent ANOVA

	Health Index		General Well Being		Symptoms	
Organization:	F	p	F	p	F	p
Gender	9.25	(.003)				
Organ(Mom)	3.59	(.060)				
Gender x Stress	4.57	(.012)				
Organ(Dad) x Stress	2.80	(.064)				
Gender x Organ(Mom)	5.07	(.026)	3.36	(.069)		
Privacy:						
Gender	7.99	(.005)				
Gender x Stress	3.15	(.048)				
Priv(Mom)			3.75	(.054)		
Gender x Priv(Dad)			3.96	(.048)		
Stress x Priv(Dad)					3.68	(.028)
Problem Solving:						
Gender	8.25	(.005)			3.82	(.054)
Stress	3.32	(.039)				
Gender x Stress	3.51	(.033)				
Gender x Probl. Solv.			4.22	(.042)		

Cell Means And Sample Size

1. Organization

   a. Health Index
      1. Gender: Males = 80.20 (78); Females = 76.32 (86)
      2. Organ(Mom): High = 79.56 (76); Low = 76.92 (69)
      3. Gender x Stress:

		Males	Females
Stress	High	76.68 (19)	77.04 (25)
	Mixed	79.07 (29)	75.55 (33)
	Low	84.73 (22)	76.76 (17)

      4. Organ(Dad) x Stress:

		Low Organ(Dad)	High Organ(Dad)
Stress	High	76.93 (28)	76.81 (16)
	Mixed	75.77 (31)	78.61 (31)
	Low	82.57 (14)	80.52 (25)

      5. Gender x Organ(Mom):

	Males	Females
High Organ(Mom)	80.83 (41)	78.70 (40)
Low Organ (Mom)	79.76 (79)	73.60 (35)

   b. General Well Being (low score equals high well being)

      1. Gender x Organ(Mom)

	Males	Females
High Organ(Mom)	26.55 (29)	23.85 (39)
Low Organ(Mom)	25.67 (40)	27.14 (35)

2. Privacy

a. Health Index

1. Gender: Males = 80.79 (78); Females = 76.05 (86)

2. Gender x Stress:

		Males	Females
Stress	High	77.35 (20)	76.85 (27)
	Mixed	79.33 (33)	75.24 (42)
	Low	85.19 (25)	76.76 (17)

b. General Well Being (Low score equals high well being)

1. Priv(Mom): High Priv(Mom)= 24.40 (83);
Low Priv (Mom) = 27.19 (79)

2. Gender x Priv(Dad):

	Males	Females
High Priv(Dad)	25.95 (43)	23.74 (42)
Low Priv(Dad)	26.44 (34)	27.00 (43)

c. Symptoms

1. Stress x Priv(Dad)

		Low Priv(Dad)	High Priv(Dad)
Stress	High	.046 (28)	-.598 (15)
	Mixed	- .267 (26)	.358 (34)
	Low	- .140 (12)	-.031 (22)

Distribution of symptoms were standarized prior to analysis.

3. Problem Solving

a. Health Index

1. Gender: Males = 81.00 (66); Females = 76.34 (71)
2. Stress: High = 82.90 (40); Mixed = 76.90 (67); Low = 78.18 (30)
3. Gender x Stress:

		Males	Females
Stress	High	85.55 (20)	77.60 (10)
	Mixed	80.00 (27)	74.80 (40)
	Low	77.63 (19)	77.60 (21)

b. General Well Being (Low score equals high well being)

1. Gender x Problem Solving

	Males	Females
High Probl. Solv.	25.47 (38)	25.88 (34)
Low Probl. Solv.	28.15 (27)	23.78 (36)